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RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/880,503

DATE: 06/28/2001

TIME: 14:56:06

Input Set : A:\9596-331.app

Output Set: N:\CRF3\06282001\I880503.raw

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3 <110> APPLICANT: CINES, Douglas B
             HIGAZI, Abd Al-Roof
      6 <120> TITLE OF INVENTION: COMPOSITIONS AND METHODS FOR MODULATING MUSCLE CELL AND
             TISSUE CONTRACTABILITY
     9 <130> FILE REFERENCE: 9596-331
C--> 11 <140> CURRENT APPLICATION NUMBER: US/09/880,503
C--> 12 <141> CURRENT FILING DATE: 2001-06-13
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     14 <150> PRIOR APPLICATION NUMBER: US 60/212,847
     15 <151> PRIOR FILING DATE: 2000-06-20
     17 <160> NUMBER OF SEQ ID NOS: 18
     19 <170> SOFTWARE: PatentIn Ver. 2.1
     21 <210> SEQ ID NO: 1
     22 <211> LENGTH: 88
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     24 <213> ORGANISM: Homo sapiens
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     30 Thr Asp Thr Met Gly Arg Pro Cys Leu Pro Trp Asn Ser Ala Thr Val
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     33 Leu Gln Gln Thr Tyr His Ala His Arg Ser Asp Ala Leu Gln Leu Gly
     36 Leu Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Arg Arg Pro
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     39 Trp Cys Tyr Val Gln Val Gly Leu Lys Pro Leu Val Gln Glu Cys Met
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    48 <212> TYPE: PRT
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     55 Gly Thr Cys Val Ser Asn Lys Tyr Phe Ser Asn Ile His Trp Cys Asn
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    58 Cys Pro Lys Lys Phe Gly Gly Gln His Cys Glu Ile Asp Lys Ser
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    69 1
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71 Gly Thr Cys Val Ser Asn Lys Tyr Phe Ser Asn Ile His Trp Cys Asn

Input Set : A:\9596-331.app

Output Set: N:\CRF3\06282001\I880503.raw

72	•			20					25					30		
	Cvs	Pro	Lys		Phe	Glv	Glv	Gln		Cvs	Glu	Ile	Asp		Ser	Lvs
75	-1-		35	-1 -		1	1	40		-1-			45	-1-	001	210
77	Thr	Cys	Tyr	Glu	Gly	Asn	Gly	His	Phe	Tyr	Arg	Gly	Lys	Ala	Ser	Thr
78		50	-		-		55			-		60	-			
80	Asp	Thr	Met	Gly	Arg	Pro	Cys	Leu	Pro	Trp	Asn	Ser	Ala	Thr	Val	Leu
81	65					70					75					80
83	Gln	Gln	Thr	Tyr	His	Ala	His	Arg	Ser	Asp	Ala	Leu	Gln	Leu	Gly	Leu
84					85					90					95	
86	Gly	Lys	His	Asn	Tyr	Cys	Arg	Asn	Pro	Asp	Asn	Arg	Arg	Arg	Pro	${\tt Trp}$
87				100					105					110		
	Cys	Tyr	Val	Gln	Val	Gly	Leu	_	Pro	Leu	Val	Gln	Glu	Cys	Met	Val
90	_		115					120					125			
	His		Cys	Ala	Asp	Gly		Lys	Pro	Ser	Ser		Pro	Glu	Glu	Leu
93		130	a 1	~	~ 1	~ 3	135	1	_		_	140		_		
		Pne	Gln	Cys	GTA		Lys	Thr	Leu	Arg		Arg	Phe	Lys	Пе	
	145	a1	a 1	Dha	m b	150	T1 -	a 1	3	a1	155	TT	nl	23	. 1 .	160
99	СТУ	GTĀ	Glu	Phe	165	THE	тте	GIU	ASII		PLO	ттр	Pne	Ата		тте
	ጥኒንን	- 70 mm	Δra	บา๋อ		c Gla	cl _v	Car	· Wal	170	· 1777	· 1/21	Cvc	Cla	175	Ser
101		Arg	AIG	180		г сту	СТУ	261	185		тут	val	. Cys	190	_	ser
		Tle	Ser			Trn	Va1	Tle			Thr	Hic	Cvs			Asp
105			195		, 0,1		, , ,	200		2114		1111	205		. 110	ASP
		Pro			Glu	Asp	Tvr			Tvr	Leu	Glv			Ara	Leu
108		210		4			215			- 1 -		220	-		5	
110	Asn	Ser	Asn	Thr	Gln	Gly	Glu	Met	Lys	Phe	Glu	. Val	Glu	Asn	Leu	Ile
	225					230			_		235					240
113	Leu	His	Lys	Asp	Tyr	Ser	Ala	Asp	Thr	Leu	Ala	His	His	Asn	Asp	Ile
114					245					250					255	
116	Ala	Leu	Leu	Lys	Ile	Arg	Ser	Lys	Glu	Gly	Arg	Cys	Ala	Gln	Pro	Ser
117				260					265					270		
		Thr		Gln	Thr	Ile	Cys			Ser	Met	Tyr		Asp	Pro	Gln
120			275		_			280					285			
				Ser	Cys	Glu			Gly	Phe	Gly			Asn	Ser	Thr
123		290		m	D	01 -	295		.	35-1	m1	300		_	_	
			ьeu	Tyr	Pro		GIN	ьеи	ьys	мет			va⊥	Lys	Leu	Ile
	305		7 ~~	<i>α</i> 1	Crra	310	C1 n	Dwo	II i a	Mrrm	315		0	a1	17. 1	320
129	ser	птѕ	Arg	GIU	325		GIII	PIO	HIS	330		GTÄ	ser	GIU		THE
	Thr	T.vc	Met	Τ.Δ11			Δla	Aen	Dro			Tvc	Фhr	λen	335	Cvc
132			1100			nia			345		111	цуз	T 11T	350	261	Cys
						Glv					Ser	T.011	Gln		Δrσ	Met
135	0111	011	355	DCI	011	OLY	110	360		CID		Бец	365	Ory	Arg	ricc
	Thr	Leu	Thr	Gly	Ile	Val	Ser			Ara	Gl v	Cvs		Leu	Lvs	Asp
138		370		- 1			375	6	1	3	1	380			-10	
	Lys		Gly	Va1	Tyr	Thr		Val	Ser	His	Phe		Pro	Trp	Ile	Arg
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143	Ser	His	Thr	Lys	Glu	Glu	Asn	Gly	Leu	Ala	Leu					
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Input Set : A:\9596-331.app

Output Set: N:\CRF3\06282001\I880503.raw

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159 Cys Pro Lys Lys Phe Gly Gly Gln His Cys Glu Ile Asp Lys Ser Lys
                                 40
             35
162 Thr Cys Tyr Glu Gly Asn Gly His Phe Tyr Arg Gly Lys Ala Ser Thr
         50
                             55
165 Asp Thr Met Gly Arg Pro Cys Leu Pro Trp Asn Ser Ala Thr Val Leu
166 65
                         70
                                             .75
168 Gln Gln Thr Tyr His Ala His Arg Ser Asp Ala Leu Gln Leu Gly Leu
                     85
                                         90
171 Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Arg Arg Pro Trp
                                    105
                100
174 Cys Tyr Val Gln Val Gly Leu Lys Pro Leu Val Gln Glu Cys Met Val
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177 His Asp Cys Ala Asp Gly Lys
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190 Thr Leu Arg Pro Arg Phe Lys Ile Ile Gly Glu Phe Thr Thr Ile
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                                     25
193 Glu Asn Gln Pro Trp Phe Ala Ala Ile Tyr Arg Arg His Arg Gly Gly
             35
                                 40
196 Ser Val Thr Tyr Val Cys Gly Gly Ser Leu Ile Ser Pro Cys Trp Val
                             55
199 Ile Ser Ala Thr His Cys Phe Ile Asp Tyr Pro Lys Lys Glu Asp Tyr
                                             75
                         70
202 Ile Val Tyr Leu Gly Arg Ser Arg Leu Asn Ser Asn Thr Gln Gly Glu
                     85
205 Met Lys Phe Glu Val Glu Asn Leu Ile Leu His Lys Asp Tyr Ser Ala
                                    105
                                                        110
206
                100
208 Asp Thr Leu Ala His His Asn Asp Ile Ala Leu Leu Lys Ile Arg Ser
                                120
                                                    125
211 Lys Glu Gly Arg Cys Ala Gln Pro Ser Arg Thr Ile Gln Thr Ile Cys
                            135
       130
214 Leu Pro Ser Met Tyr Asn Asp Pro Gln Phe Gly Thr Ser Cys Glu Ile
                                            155
                        150
215 145
217 Thr Gly Phe Gly Lys Glu Asn Ser Thr Asp Tyr Leu Tyr Pro Glu Gln
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Input Set : A:\9596-331.app

Output Set: N:\CRF3\06282001\1880503.raw

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218
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                                        170
220 Leu Lys Met Thr Val Val Lys Leu Ile Ser His Arg Glu Cys Gln Gln
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                                    185
223 Pro His Tyr Tyr Gly Ser Glu Val Thr Thr Lys Met Leu Cys Ala Ala
           195
                                200
226 Asp Pro Gln Trp Lys Thr Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro
                            215
                                                220
229 Leu Val Cys Ser Leu Gln Gly Arg Met Thr Leu Thr Gly Ile Val Ser
                                            235
                        230
232 Trp Gly Arg Gly Cys Ala Leu Lys Asp Lys Pro Gly Val Tyr Thr Arg
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235 Val Ser His Phe Leu Pro Trp Ile Arg Ser His Thr Lys Glu Glu Asn
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238 Gly Leu Ala Leu
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243 <211> LENGTH: 403
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251 Gly Thr Cys Val Ser Asn Lys Tyr Phe Ser Asn Ile His Trp Cys Asn
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254 Cys Pro Lys Lys Phe Gly Gly Gln His Cys Glu Ile Asp Lys Ser Lys
257 Thr Cys Tyr Glu Gly Asn Gly His Phe Tyr Arg Gly Lys Ala Ser Thr
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260 Asp Thr Met Gly Arg Pro Cys Leu Pro Trp Asn Ser Ala Thr Val Leu
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263 Gln Gln Thr Tyr His Ala His Arg Ser Asp Ala Leu Gln Leu Gly Leu
266 Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Arg Arg Pro Trp
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269 Cys Tyr Val Gln Val Gly Leu Lys Pro Leu Val Gln Glu Cys Met Val
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272 His Asp Cys Ala Asp Gly Lys Leu Lys Phe Gln Cys Gly Gln Lys Thr
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275 Leu Arg Pro Arg Phe Lys Ile Ile Gly Glu Phe Thr Thr Ile Glu
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278 Asn Gln Pro Trp Phe Ala Ala Ile Tyr Arg Arg His Arg Gly Gly Ser
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281 Val Thr Tyr Val Cys Gly Gly Ser Leu Ile Ser Pro Cys Trp Val Ile
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                                    185
284 Ser Ala Thr His Cys Phe Ile Asp Tyr Pro Lys Lys Glu Asp Tyr Ile
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287 Val Tyr Leu Gly Arg Ser Arg Leu Asn Ser Asn Thr Gln Gly Glu Met
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                                                220
290 Lys Phe Glu Val Glu Asn Leu Ile Leu His Lys Asp Tyr Ser Ala Asp
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Input Set : A:\9596-331.app

Output Set: N:\CRF3\06282001\1880503.raw

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	Thr	Leu	Ala	HIS		Asn	Asp	TTE	Ala		Leu	ьуs	тте	Arg		Lys
294	a 1	03	3	0	245	01 =	D		3	250	77.	01	m)	- 3	255	- .
	Glu	GTĀ	Arg		Ата	GIII	Pro	ser		Thr	тте	GIn	Thr		Cys	Leu
297		G	11-4	260	1		D-+-	01	265	a 1 -	m1	a		270	1	m1
	Pro	ser		Tyr	Asn	Asp	Pro		Phe	GTA	Thr	Ser	-	Glu	He	Thr
300	01	D1	275	.	a 1			280		-	_	_	285			_
	Gly		GTA	гÀг	GIU	ASII		Thr	Asp	Tyr	ren		Pro	Glu	GIn	Leu
303	T	290	m 1	77 - T	17- 1	T	295	-1 -	a	***		300	_		~ 7	_
	Lys	met	rnr	vaı	vaı		Leu	ше	ser	HlS		Glu	Cys	Gin	GIn	
	305	(T) = ===	(T)====	a1	G	310	17- 7	m 1	m 1	T	315	.	a			320
	His	Tyr	туг	GIY		GIU	vaı	Thr	Thr		мет	Leu	Cys	Ата		Asp
309	Dwo	01 n	/II	T ***	325	7 ~~	0	0	a1	330	3	a	a 3	01	335	.
311	Pro	GIII	ттр		THE	ASP	261	Cys		GTĀ	Asp	ser	GLY		Pro	Leu
	170 J	O	0	340	01 =	a1	3	W-+	345	T	ml	a 1.	-1	350	.	
	Val	Cys		ьец	GIII	GIÀ	Arg		THI	Leu	THE	сту		vaı	ser	Trp
315	01	7	355	O	7 7 n	т о	T G	360	T	D	a1	17- 3	365	m1		**- 1
	Gly		GTÀ	Cys	Ald	Leu		Asp	гуу	Pro	GIY		туr	Thr	Arg	vaı
318	Con	370	Dho	T 011	Dwo	m ~~	375	7 ~~~	0.00	rr i a	mb	380	01	a 1	3	a1
	Ser 385	птъ	Phe	теп	PIO	390	116	Arg	ser	HIS		гаг	GIU	GIU	ASI	
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	<21															
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マクロ																
					Ното	n gar	niano	2								
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330 332	<213 <400	3> OF 3> SE	RGANI EQUEN	SM: ICE:	7				Ser	Δan	Cve	Asn	Cve	Τ.Δ.1	Acn	Clv
330 332 333	<213 <400 Ser	3> OF 3> SE	RGANI EQUEN	SM: ICE:	7 His				Ser		Cys	Asp	Cys	Leu		Gly
330 332 333 334	<213 <400 Ser	3> OF 3> SE Asn	RGANI EQUEN Glu	ISM: ICE: Leu	7 His 5	Gln	Val	Pro		10	_	_	_		15	-
330 332 333 334 336	<213 <400 Ser	3> OF 3> SE Asn	RGANI EQUEN Glu	ISM: NCE: Leu Val	7 His 5	Gln	Val	Pro	Phe	10	_	_	_	Trp	15	-
330 332 333 334 336 337	<213 <400 Ser 1 Gly	3> OF 3> SE Asn Thr	RGANI EQUEN Glu Cys	ISM: ICE: Leu Val 20	7 His 5 Ser	Gln Asn	Val Lys	Pro Tyr	Phe 25	10 Ser	Asn	Ile	His	Trp	15 Cys	Asn
330 332 333 334 336 337 339	<213 <400 Ser	3> OF 3> SE Asn Thr	RGANI EQUEN Glu Cys Lys	ISM: ICE: Leu Val 20	7 His 5 Ser	Gln Asn	Val Lys	Pro Tyr Gln	Phe 25	10 Ser	Asn	Ile	His Asp	Trp	15 Cys	Asn
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330 332 333 334 336 337 339 340 342 343 345 346	<213 <400 Ser 1 Gly Cys Pro	3> OF 3> OF Asn Thr Pro Ser 50 Arg	RGANI EQUEN Glu Cys Lys 35 Ser	ISM: NCE: Leu Val 20 Lys Pro	7 His 5 Ser Phe Pro	Gln Asn Gly Glu Lys 70	Lys Gly Glu 55 Ile	Pro Tyr Gln 40 Leu	Phe 25 His Lys Gly	10 Ser Cys Phe Gly	Asn Glu Gln Glu 75	Ile Ile Cys 60 Phe	His Asp 45 Gly Thr	Trp 30 Lys Gln Thr	15 Cys Ser Lys Ile	Asn Lys Thr Glu 80
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330 332 333 334 336 337 340 342 343 345 346 348 349 351 352 354 355	<213 <400 Ser 1 Gly Cys Pro Leu 65 Asn Val	3> OF ASD ASD ASD ASD ASD ATG ATG ADA ADA	Cys Cys Lys Ser Pro Pro Tyr Thr	Val 20 Lys Pro Arg Trp Val 100 His	7 His 5 Ser Phe Pro Phe 85 Cys	Gln Asn Gly Glu Lys 70 Ala Gly Phe	Lys Gly Glu 55 Ile Ala Gly Ile	Pro Tyr Gln 40 Leu Ile Ile Ser Asp 120	Phe 25 His Lys Gly Tyr Leu 105	10 Ser Cys Phe Gly Arg 90 Ile Pro	Asn Glu Gln 75 Arg Ser Lys	Ile Ile Cys 60 Phe His Pro	His Asp 45 Gly Thr Arg Cys Glu 125	Trp 30 Lys Gln Thr Gly Trp 110 Asp	15 Cys Ser Lys Ile Gly 95 Val	Asn Lys Thr Glu 80 Ser Ile Ile
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VERIFICATION SUMMARY

DATE: 06/28/2001

PATENT APPLICATION: US/09/880,503

TIME: 14:56:07

Input Set : A:\9596-331.app

Output Set: N:\CRF3\06282001\1880503.raw

L:11 M:270 C: Current Application Number differs, Replaced Application Number

L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date